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DR. JOHN JEFFRIES.

Dr. Jeffries was the last survivor in the fifth generation from his ancestor, Mr. David Jeffries, who came from England and settled in Boston in 1677. His father, Dr. John Jeffries, who died in 1819, was a distinguished physician and surgeon in his native town of Boston, both before and after the revolutionary war, having during this latter period served in the medical department of his majesty's forces as surgeon and medical purveyor. The *New England Medical Journal* of January, 1820, contains an interesting sketch of his life.

The late Dr. Jeffries was born March 23, 1796, at his father's mansion-house in Tremont Street. He was the third son named John, and the seventh child by second marriage to an English lady named Hannah Hunt, six years after his father's final return to, and settlement in practice again in, his native town of Boston. He went to Harvard College at fifteen years of age, and was graduated in the class of 1815, which contained a number of eminent men, some of whom still survive their classmate. The medical men of his class were Drs. Joseph Baxter, William Goddard, Thaddæus W. Harris, Appleton Howe, Thomas Pratt, William Sweetser, Jonas Underwood, Samuel Webber, and Danforth Phipps Wight. Three years later he received the degree of Master of Arts from Harvard, and March, 1819, the degree of Doctor in Medicine, having studied with his father and been a pupil of those whose names are attached to his medical diploma, — Drs. James Jackson, John C. Warren, John Gorham, Jacob Bigelow, and Walter Channing. In 1825, he received an honorary degree of Doctor in Medicine from Brown University. In 1826, he became a Fellow of the Massachusetts Medical Society. He was a councilor and censor for several years, and one of the principal movers in the establishment of the district societies, having been chosen the first president of the Suffolk District Society, which office he held for three years. He was an honorary member of the New York State Medical Society and of the American Ophthalmological Society. He served the city of Boston on the Board of Consulting Physicians for several years, during which he earnestly strove for the establishment of a properly organized Board of Health. For many years previous to his death he was a member of the Consulting Board

of the Massachusetts General Hospital and the City Hospital of Boston. For many years also he served on the Boylston Prize Committee of Harvard University. In 1820, Dr. Jeffries married Ann Geyer, daughter of Rufus Greene and Ann Geyer Amory, of Elm Hill, Roxbury. They had eight children, six of whom, two daughters and four sons, survive him.

From a very child he grew up in the spirit and feeling of the profession. At five years of age he stood by and held the lancet for his father. Intercourse with the medical pupils in his father's house, and familiarity with almost a museum of instruments and specimens there contained, naturally shaped his training and stimulated his ambition. From the time of graduation at Harvard, in 1815, he worked incessantly in study under his father and the professors of the college, so that immediately on receiving his medical degree he was taken into partnership by his father, and thus very rapidly entered into a large and active practice, which always so pressed upon him throughout his professional life, as to give him no opportunity of breaking off to follow European study, much as he appreciated its value and envied those who gained it.

His father's teaching and example gave Dr. Jeffries special interest in and knowledge of surgery. As early as 1829 he received the following offer from the late Prof. John Collins Warren, M. D.: —

Tuesday, March 24, 1829.

My Dear Sir, — Our friend Dr. Reynolds has resigned the office of assistant surgeon to the hospital. If agreeable to you, I should be glad to nominate you as his successor. Should you require any further information on the subject than what you possess, I will be at home to-morrow evening at eight o'clock, or will call on you as you may appoint.

Very truly yours, J. C. Warren.

This very complimentary offer on the part of the professor of surgery of Harvard, Dr. Jeffries was obliged to decline, as he had already undertaken a most important charitable work in connection with his still surviving friend, Dr. Edward Reynolds, namely, the establishment of an eye and ear infirmary, now known as the Massachusetts Charitable Eye and Ear Infirmary. To this charity he devoted his time and talents, exercising all his social and professional influence in its behalf. The following letter from the late Hon. John Lowell is of some interest as showing the efforts on the part of the founders of this now great charity: —

Tuesday Morning.

Dear Sir, — The statement made by you and Dr. Reynolds is very satisfactory as to the facts, and perspicuous and eloquent in its appeal to the public benevolence. I have not known a case so strongly demanding the sympathy and, of course, none having a better claim to the charity of the public, since the institution of the Massachusetts General Hospital.

I feel persuaded that it will be so received, or at least I have strong hopes

that it will be. I shall as far as I have any influence encourage it by my opinions and example. I shall attend this evening if I am not too much indisposed. I have been sick for some days past, and have not diminished my complaints by attending a public meeting last evening and partaking in the debates. Very truly yours, J. Lowell.

Dr. Jeffries, Franklin Street.

Dr. Jeffries not only devoted himself to the founding and establishment of the infirmary, but he delivered courses of lectures on the eye, both theoretical and clinical, and faithfully worked for eighteen years as its surgeon, even then being most earnestly solicited by the managers, especially the late Robert G. Shaw, not to resign. When he did so he received the following testimonial of the value of his services: —

Boston, *February* 9, 1843.

John Jeffries, M. D.

Dear Sir, — I have much pleasure in conveying to you the inclosed, and remain, sir, with much respect, your obedient, humble servant,

G. H. Shaw.

"At a meeting of the managers of the Massachusetts Charitable Eye and Ear Infirmary, held on Tuesday evening the 7th of February, 1843, a letter from John Jeffries, M. D., declining a reappointment as surgeon of the infirmary having been read, it was unanimously voted, 'that the same be accepted, entered at large upon the records, and placed on file; and further, that the thanks of the managers of the Massachusetts Charitable Eye and Ear Infirmary be presented to John Jeffries, M. D., one of the original founders, and for the past eighteen years a surgeon of the institution, for his unceasing efforts for the promotion of its usefulness and prosperity, and their deep regret that his professional duties require his retirement from the institution.'

"A true copy. Attest: G. H. Shaw, *Secretary.*

"Boston, *February* 9, 1843."

Dr. Jeffries practiced here in Boston fifty-six years. Besides his special work in ophthalmic surgery, he did a large midwifery and general practice. Long before and even after the establishment of the dispensary he was most prodigal of his physical and mental efforts among the poor of the town. It may be as truly said of him, as of his father before him, that "the poor of the town, from whom no fee could be expected, equally shared his best attentions with the richest of his patients; and if money were wanting to purchase the medicines and comforts he prescribed, it was as frequently supplied from his charitable purse." He made it a rule to give away in charity all fees obtained by his enforced professional work on Sundays. His well-known disposition was such that he was infrequently imposed on during the hurried hours of office consultations, and really brought to task by the managers of the various charities as they were established in the city, which did not unfortunately harden his heart to any tale of poverty and misery. To a very large number of his patients he was physician, lawyer, and spiritual adviser

and frequently his time was called upon in the latter capacity as freely as the former. But he was ever ready to listen and help. Hardly through the whole of his professional life did he ever sit down to a meal at his own house without interruption. To him his profession was above all things, and the care and relief of the sick and suffering his paramount duty. Yet no one more appreciated or enjoyed social engagements or family gatherings. He was a capital reader and very striking declaimer and actor. In early life he was very fond of the best plays, and many of the first actors were friends and patients of his father and himself. As far as the pressing duties of a most active life would allow, he kept himself well up with the literature of his profession, always when in his office having a book in his hand if not otherwise occupied.

Although Boston was not fifty years ago the crowded city it now is, yet Dr. Jeffries even then recognized that his family of young children needed to be out of town during the summer months, and in 1833 he built a cottage, still standing, on Noddle's Island point, when only two other houses were on what has now grown into East Boston. There he was accustomed to go on summer afternoons, and was a well-known character in his boat about the harbor and bay. But except in case of illness he never stayed away over night, always returning at nine o'clock to his house in Franklin Street, and seeing many a patient afterward. He thus got needed recreation without interruption to his professional work. Time has proved that he was right, and we see, one after another, overworked medical men forced to remove their families from the city in summer, and catch the hours when they can join them for their much-needed recreation.

Dr. Jeffries was for many years the intimate friend and confidential physician of Daniel Webster, and shared with him his love of shooting and fishing. He was with Mr. Webster through the whole of his last illness at Marshfield, and after his death built a shooting-lodge on a portion of land purchased from the estate, and then, as in former days at East Boston point, he only too infrequently sought relaxation from the fatigue of professional labor. Like his father before him, he was a most enthusiastic sportsman, but he never let this take him away from business or duty. When nearly eighty years of age, feeble and crippled by infirmities, he nevertheless insisted in going out fishing for, and catching, blue fish at Mattapoisett, where he passed his last summer.

To the medical profession he was most perfectly loyal. He always insisted on their rights, and ever strove to inculcate in the community the respect due them. He never from any motive allowed to pass, without remonstrance, fulsome praise of the licensed or unlicensed fashionable charlatan of the day. In his address at the first anniversary of the Suffolk District Medical Society, 1850, he showed that while there had been a

large abatement in the public mind of that reverence with which the educated physician and his prescriptions were once regarded, yet his claims to confidence had steadily augmented, and the profession, as a body, had never stood on so lofty an eminence for knowledge and integrity as then. In the spirit of this belief he acted from that time as long as he lived. Without anger or irritation, but with firmness and decision which carried weight, he argued and reasoned with his patients and the laity as to the folly and falsehood of the "isms" of the day in medicine. He was most thorough and clear in his own belief, and never swerved, whatever reputed authority supported this or that pretender or his cause. He detested imposture, in or out of the profession, and was ever ready to lend his aid fearlessly for its exposure. He had an innate respect for true science, and passed no more enjoyable hours than at the meetings of the Thursday Evening Club. His family always looked forward with pleasure to the clear and graphic accounts he gave them at the breakfast-table, the next morning, of what he had seen and heard among his scientific friends.

His religious belief was that of his father, and he was a devoted member of the Protestant Episcopal Church, working with his pastors at old Trinity and St. Paul's. This is not, of course, the place to speak of his long life's work in matters of religion. No man more thoroughly lived up to the warning he gently gave to his professional brethren in his address to them above noticed, when he said, "There is a danger that those engaged in investigating material things should forget the hand which brought them into existence; that while science is pushing its inquiries into the cause and manner of reproduction, and looking through matter for its vital principle, it will forget Him who breathes into it 'the breath of life.' Let us flee this danger by a cherished regard for a divine revelation. Let us labor in our profession with zeal and earnestness, as if success depended only on ourselves; and let us seek the counsel of the Great Physician as if the blessing was alone from Him, without whose aid

> 'Bethesda's baths would never heal,
> Nor Siloam's pool restore.'"

FORCE OF CILIARY MOTION.

BY H. P. BOWDITCH, M. D.,
Professor of Physiology, Harvard Medical School.

Most observers who have studied the movements of cilia have directed their attention to the evidence of ciliary activity afforded by the rapidity with which *very light* bodies are carried over the surface of the ciliated membrane. Thus Valentin[1] observed that the globules of

[1] Wagner's Lexicon, i. 506.

mucus on the gills of anodonta were carried forward at the rate of four m. m. in one minute. Engelmann,[1] in studying the various conditions which affect ciliary activity, made observations on the rapidity with which a small globule of sealing-wax, suspended by a light silk thread so as to merely touch the membrane, was moved forward over the ciliated surface. The rate varied in his observations from 7.8 to 24.5 m. m. in one minute. Calimburces,[2] also, in constructing his apparatus for measuring ciliary movement, made all the parts as light as possible, in order to reduce the work done by the cilia to a minimum.

The late Jeffries Wyman [3] was the first to call attention to the fact that the force exerted by cilia is by no means inconsiderable. He describes his experiments on frogs as follows: "The mucous membrane being carefully dissected from the roof of the mouth is pinned to a board. A piece of skin from near the throat of the frog, and from one third to half an inch square, is placed upon this membrane with the inner surface in contact with the cilia, it being kept in mind that these vibrate from before backwards towards the throat. On the skin may be placed a plate of lead of somewhat smaller size. This serves as a vehicle to which weights may be added at will to increase the load. . . . Pains should be taken to have the board on which the experiment is made perfectly horizontal, otherwise a sliding motion, especially when heavy weights are used, may come in to vitiate the experiment." The rate of movement was determined either by direct observation of the lead "vehicle" with its load, or by means of an index attached to the axle of the smaller of a pair of light cog-wheels, the "vehicle" being connected with the apparatus by means of a thread coiled round a drum on the axle of the larger wheel. By experiments performed in this way it was found that a weight of 1.3 grammes was carried fifteen m. m. in about one minute, the weight resting on a surface of twelve m. m. square, and that "forty-eight grammes, resting on a surface fourteen m. m. square, moved, though very slowly, across the whole length of the membrane; but the exact time was not noted."

It will be noticed that in these experiments the work done by the cilia consisted in overcoming the friction of the skin upon the membrane and of the parts of the index-apparatus on each other, and that the amount of this work, though increased by the addition of weights to the lead plate, was not, and could not well be, accurately determined. The weight being moved in a horizontal plane, there was no direct performance of work which could be measured by foot-pounds or kilogrammetres. In view, however, of the evidently very considerable force of the ciliary movement, it seemed important to determine the

[1] Flimmerbewegungen, page 70.
[2] American Naturalist, v. 611.
[3] Bernard, Les Tissues vivants, page 141.

maximum of work which could be performed in a given time by a given surface of ciliated membrane. The simplest way of accomplishing this object seemed to be to repeat Wyman's experiments, with the modification of giving to the board on which the membrane rested an inclination which would compel the cilia to move a weight resting upon them up an inclined plane. Then the product of the weight by the height through which it was lifted would give the value sought.

After several preliminary experiments an apparatus was constructed consisting of a piece of thin board about eleven c. m. square with a narrow strip of wood about seven m. m. in thickness, fastened at the middle of one edge. A strip of glass 4.5 c. m. long, by one c. m. broad, with edges smoothed on a grindstone, was firmly cemented by one end to the middle of the strip of wood, and thus projected over the surface of the board, parallel to, and 7 m. m. from it. A frog with brain and spinal cord destroyed was then prepared as follows: a transverse incision about one c. m. long, was made through the mucous membrane of the roof of the mouth as far forward as possible. The free end of the glass strip was inserted into this incision and pushed back between the membrane and the bones of the palate. The lower jaw was then cut away and the œsophagus laid open as far as the stomach. The cut edges of the œsophagus were kept extended by pins thrust through them into the board below. The frog thus lay upon the board with the body under the strip of glass and the ciliated membrane from the anterior edge of the palate to the stomach smoothly stretched over it and accessible to observation and experiment. A vehicle to be moved by the cilia was made by cementing a small oval piece of glass of 1.437 square c. m. area to a thin piece of wood of the same size. The glass surface was then covered with a piece of frog's skin stretched over it, with the inner surface outward, and held in place by a thread tied round it and lying in a groove cut in the edge of the wood. This vehicle, when placed with the skin downward upon the ciliated membrane, was readily carried along toward the stomach. The work done by the cilia could be increased either by placing weights upon the vehicle or by inclining the whole apparatus so that the vehicle should be carried up an inclined plane. The latter object was readily effected by means of a wedge pushed under the edge of the board opposite to the point where the glass strip was fastened. The wedge was so graduated that in every position it could be seen at a glance what proportion of the distance moved over by the vehicle was movement in a vertical direction. The movement of the vehicle was observed with a microscope of low power, furnished with an eye-piece micrometer. The draw-tube of the instrument was so adjusted that thirty divisions of the eye-piece micrometer corresponded to one m. m. in the field of vision. A stop-watch was used to determine the time occupied by a chosen point on the vehicle in passing over these thirty micrometer divisions.

It will thus be seen that the data of observation in our problem were as follows: —

a = grade per cent.; *i. e.*, the movement in a vertical direction expressed as a percentage of the distance moved, and determined by a simple observation of the position of the wedge.

b = weight in grammes of the vehicle and the load placed upon it.

c = time occupied by the vehicle in moving one m. m.

d = area in $\frac{}{\text{c. m.}^2}$ of the surface of the vehicle applied to the ciliated membrane.

The value to be determined by means of these observations was the amount of mechanical work, expressed in grammillimetres,[1] which was performed by one square centimetre of ciliated membrane in one minute. If we express this value by x we shall have the formula, —

$$x = \frac{a}{100} \times b \times \frac{60}{c} \times \frac{1}{d} = \frac{6\,ab}{10\,cd}$$

This formula expresses, of course, only the work done in raising the vehicle with its load. A certain amount of work is also performed in overcoming the friction of the vehicle on the membrane; but this amount is very difficult to determine, because the moving force is generated at the same point where the friction is applied. It is probably small in comparison with the work of raising the vehicle, and it was therefore disregarded.

A modification of the experiment consisted in placing the board in a perpendicular position, so that the vehicle, held in contact with the membrane by capillary attraction, was carried vertically upward. In this case $a = 100$, and the above formula becomes $x = \frac{60\,b}{c\,d}$. In order to obtain as great uniformity as possible in these observations, it was, of course, important to avoid drying of the membrane. For this purpose a 0.5 per cent. solution of common salt, made very slightly alkaline with sodic hydrate, was applied from time to time to the membrane. The results were nevertheless by no means so uniform as could be desired. The following table may serve as an example of the experiments. In this case the grade was at first kept constant at ten per cent., and weights of five, ten, and twenty grammes placed successively upon a vehicle weighing 0.534 gramme. Afterward the board was placed in a vertical position, and observations made on the rate at which the vehicle alone was carried upward.

It will be seen from the table, that by loading the vehicle the rapidity of its movement was diminished, but not in proportion to the increase of the weight. In other words, the greatest amount of work was obtained with the heaviest load. Thus the cilia, when compelled to carry a weight of 20.534 grammes up a grade of one in ten, performed in one minute for each square centimetre of surface, an amount of work equal

[1] This small unit of work was chosen merely for the sake of convenience in writing the results. It is, of course, one millionth of a kilogrammetre.

to 6.805 grammillimetres. This was the maximum of work obtained in upward of one hundred observations made with various weights and grades; but it is not probable that it is the maximum of work which cilia are capable of performing. It is perfectly possible that under somewhat different conditions they may work to much better advantage.

a. Grade. Per cent.	b. Weight. Grammes.	c. Time. Seconds	d. Area. c. m.^{2}	$x = \frac{6ab.}{10cd.}$ Grammillimetres.
10	10.534	10.8	1.437	4.074
10	10.534	7.4	1.437	5.940
10	20.534	15.	1.437	5.718
10	0.534	3.	1.437	0.743
10	5.534	5.6	1.437	4.127
10	5.534	5.	1.437	4.622
10	10.534	8.5	1.437	5.176
10	20.534	12.6	1.437	6.805
10	20.534	12.6	1.438	6.805
100	0.534	5.3	1.437	4.208
100	0.534	4 2	1.437	5.310
100	0.534	3.8	1.437	5.868
100	0.534	4.4	1.437	5.067
100	0.534	4.8	1.437	4.646
100	0.534	5.	1.437	4.460
100	0.534	5.	1.437	4.460

It will be noticed, for instance, in the above table, that, when carrying the unloaded vehicle vertically, they performed an amount of work nearly equal to the maximum obtained in carrying heavy weights up an inclined plane. It is not improbable that by altering the size, weight, or shape of the vehicle, conditions may be found under which the cilia may perform a greater amount of work than that here recorded. The investigation of this question will be the subject of a future series of experiments.

The statement that a ciliated membrane performs per square c. m. per minute, 6.805 grammillimetres of work, gives a very imperfect idea of the force of the moving cilia, unless we obtain a conception of the bulk of the organs where this force is generated. It is generally believed, though not absolutely demonstrated, that the force which moves the cilia is generated in the protoplasm of the ciliated cells. These cells in the frog's mouth are spherical in form, with the cilia upon one side. The average of nine measurements gave a diameter of 0.016 m. m., which agrees very well with Valentin's figures. If we imagine spherical cells of this size placed close together on the surface of the membrane, the volume of the cells on one square centimetre of surface will be 1.6 cubic millimetres and their weight, if we suppose them to have the specific gravity of water, will be 0.0016 gramme. Thus we see that a mass of protoplasm weighing 0.0016 gramme performs in one minute an amount of work equal to lifting 6.805 grammes

to the height of one millimetre. This is equal to lifting 0.0016 gramme to the height of 4253 millimetres. In other words, the ciliated cells perform in one minute an amount of work equal to lifting their own weight to the height of 4.253 metres. It is interesting to compare this value with that obtained for the striated muscles of the heart. The work performed by the heart at each pulsation is equal to the weight of the blood expelled by the contraction multiplied by the height of a column of blood which measures the tension in the aorta and pulmonary arteries. From these data Schiff[1] has estimated that the heart does in one minute an amount of work equal to lifting its own weight to the height of one hundred and fifty metres, a value more than thirty-five times as great as that above given for the ciliated epithelium.

RECENT PROGRESS IN THE TREATMENT OF CHILDREN'S DISEASES.[2]

BY D. H. HAYDEN, M. D.

On the Nutrient Properties of Leguminous Substances and their Value as Food for the Sick.[3] — As is well known, Professor Beneke, of Marburg, has reported very favorably upon the use of leguminous substances as a diet for infants and the sick.[4] At the same time he justly emphasizes the necessity of its administration in the form of powder reduced to the finest state of subdivision. In this form of finely divided powder, according to Beneke's statement, lentils and peas furnish a very easily digested food for the sick, which forms a marked contrast to the same substances when prepared in the usual way, as a soup, in which the peas are much swollen, but not disintegrated, and consequently difficult of digestion.

Induced by Professor Beneke's recommendations and following his suggestions, Herr Hartenstein, of Niederwiesa (Saxony), has placed in the market a preparation under the name "Leguminose," consisting of a "finely divided leguminous and cereal powder," there being four different mixtures, the nitrogenous matter standing in relation to the non-nitrogenous approximately as 1 : 2.3; 1 : 3.3; 1 : 3.9; 1 : 4.8. This preparation has been favorably spoken of by numerous medical men in Germany when employed in cases of catarrhal troubles of the stomach and intestines, especially in infants, in convalescence from typhoid fever, and in phthisis. Professor Beneke, also, in a second article,[5] A Word concerning Herr Hartenstein's Leguminose, has ex-

[1] Physiologie de la Digestion, i. 24.

[2] Concluded from page 146.

[3] Dr. Adolf Strümpell, Deutsches Archiv für klinische Medicin, December 17, 1875.

[4] Berliner klinische Wochenschrift, 1872, No. 15.

[5] Berliner klinische Wochenschrift, 1874, No. 22.

pressed himself in high terms of acknowledgment of Herr Hartenstein's preparation.

In consideration of the importance of the subject, at Professor F. Hofmann's instigation, the author has been conducting several experiments with the view of testing as far as possible the actual value of the leguminous substances as articles of diet. The *leguminosæ*, amongst all other vegetables, hold a high rank for the large amount of nitrogenous matter contained in them. This view of their value as nutritious substances is based more upon their chemical properties than upon experiments made upon man or the lower animals. Moleschott[1] from the point of view alone of the nitrogenous matter contained in the leguminosæ and in meat, characterizes the former as "a true source of treasure for restoring the blood," and considers "peas in the above point of view of equal value with veal, and the kidney-bean nearly equal to pigeon-meat. . . . Lentils are far ahead of every kind of meat."

Later experiments by Voit[2] and his pupils have taught us that in estimating the nutrient properties of different kinds of food, it is equally important, in addition to their chemical composition to take into consideration their facility of assimilation. In this respect is it that we find the great difference between animal and vegetable food; and to the disadvantage of the latter. The conditions for the absorption of vegetable food are much more unfavorable than for that of animal food; and for two reasons. In the first place, the vegetable matter ordinarily used as food is inclosed, at least for the most part, in envelopes of cellulose. These interfere with the necessary changes in the nutrient matter which they surround, owing to their own indigestibility and to the difficulty which they offer to the penetration of the digestive fluids. In consequence of this a large portion of the vegetable matter leaves the intestine unabsorbed. Further, E. Bischoff[3] has made it quite probable that a formation of an acid from the starch increases the peristaltic action of the intestines, and consequently causes a more rapid emptying of the intestinal contents.

The cellulose appears to have a similar effect upon the intestinal walls. F. Hofmann[4] has also shown that where cellulose is added to animal food, the amount of the latter found in the stools is considerably increased when compared to that found when animal food is taken alone. All these facts must be taken into consideration when forming judgment upon the value of vegetables as food.

F. Hofmann gave to a man 1000 grammes potatoes (2 lbs.), 207

[1] Physiology of Food, 1859.

[2] Voit on the Difference of Animal and Vegetable Diet; Sitzungsberichte der k. Bayr. Academie, 1869, ii. 4.

[3] Zeitschrift für Biologie, Band v., 1869, s. 452.

[4] Voit's work above quoted, page 6.

grammes lentils (5½ oz.), 40 grammes bread (1¼ oz.), and one quart of beer; he thus receiving daily 14.7 grammes nitrogen. There were passed in 116 grammes (3¾ oz.) dry fæces, 6.9 grammes nitrogen (106½ grains), *i. e.* forty-seven per cent. of the nitrogen contained in the food taken.

When the same person took a similar amount of nitrogen (14.7 grammes) in the form of meat (380 grammes), and in place of starch a corresponding amount of fat, the amount of fæces passed was only 28.8 grammes, containing 2.6 grammes nitrogen, *i. e.* 17.7 per cent. of the nitrogen contained in the food.

Gustav Meyer [1] found by experiments on a dog that when fed exclusively on bread, nineteen per cent. of the nitrogen taken with its food was passed away with the fæces; whereas when an equivalent of meat was given in its place, only eight per cent. remained unabsorbed. Experiments on men gave similar results. Where white bread was used the amount of nitrogen not assimilated amounted to 19.9 per cent., and increased with the use of coarse brown bread to 42.3 per cent. E. Bischoff had previously obtained similar figures. The fæces of a dog fed with 800 grammes of bread daily contained 15.9 per cent. of the nitrogen administered in the food. From experiments upon himself, J. Ranke [2] found that on a diet of meat, of the nitrogen introduced with the food, only 7.5 per cent. passed off in the stools.

There is only one work upon the use of leguminosæ as food known, that of Woroschiloff. He instituted a series of experiments as to the comparative value of peas and meat for purposes of nourishment. Whereas by meat diet the largest amount of nitrogen passed in the stools was ten per cent., in later experiments when the largest quantities were taken it only reached eight per cent., and when given in smaller amounts three per cent. On the contrary when a diet of peas was given, in the most favorable cases it reached ten per cent., at times 12.3 per cent., and in another series of experiments seventeen per cent.

The result of the above experiments is unfavorable to the assimilability of vegetable as compared with animal food. This result, however, does not equally apply to the preparation "leguminose," as in one case the vegetable food was firm in its ordinary form, and prepared in the ordinary way, whereas the other is a powder extremely finely divided, every particle of cellulose being carefully removed. To determine the value of this preparation special experiments alone will avail.

The author has carefully and minutely given an account of experiments instituted by himself to test the properties of this preparation, and to obtain data for judging of its value as an article of diet. Want of space compels us to omit the details and to give only the results of the experiments.

[1] Zeitschrift für Biologie, vii., 1871.
[2] Physiologie, zweite Aufl. s. 196.

The packets I. and II. of Hartenstein's preparations were employed. Each packet contains about one pound of a dry powder and costs 1½ marks (35 cents). Microscopical examination showed an entire absence of any coarse particles, and as far as minute subdivision of the powder was concerned, nothing better could be asked. Though it cannot be said with certainty what special forms of meal are used, on Professor Beneke's authority, there is every probability that it is the lentil from which the powder is made.

From chemical analysis it was found that the proportion of nitrogenous to non-nitrogenous matter in packet I. stood as 1: 2.9; in packet II. as 1: 5.4.

With regard to the manner of its preparation for use, the only one recommended has been in the form of a soup, — for each soup-plate full a heaping teaspoonful of the powder being added. Reckoning 25 grammes powder to a table-spoonful, and 300–350 grammes of fluid to a soup-plate, if, as is commonly accepted, 110–130 grammes albumen and about 400 grammes carbo-hydrate are needed as daily food for an adult, 600 grammes of packet I. would be required. To obtain this requisite, it would be necessary to take 24 soup-plates full daily, nearly 7200 cubic centimetres, or about seven quarts of soup, which of course would be something impossible. It is very easy to be deceived in judging of the amount of nutrient matter contained in a soup, especially if as in this case it is prepared thick. Twenty-five grammes, the amount of this preparation necessary for a soup-plate full of the soup, in the amount of albumen it contains, corresponds nearly to 30 grammes meat, *i. e.*, to about one quarter of an ordinary beef-steak.

Another very important point to be considered is the taste of the soup. Prepared in the ordinary way with water and salt, with a small quantity of beef-extract in addition, it is not exactly unpleasant, and yet one soon gets an aversion to it. The taste can be better described as being stale, and the small amount of extract of beef added does not conceal it. The consistency of the soup, too, would prevent its being used in very large amount. It is a well known fact that after a while one becomes disgusted with all preparations of a mushy consistency if taken in large quantities.

The above impediment to the exclusive use of the leguminose as food was in the author's experience insuperable. The amount that he was able to use in the twenty-four hours was so small that he found himself compelled to add other substances, as eggs, butter, and milk, with the idea of thus being able to take larger quantities in the form of a cake. Prepared in this way the powers of assimilation proved to be good, there being only 8.2 per cent. of the nitrogen that passed off unabsorbed in the stools. During the use of this preparation the amylaceous portion was entirely absorbed, at least there was no starch or

sugar to be found in the stools. It was also noticed that during the days of the experiment there was no development of gas in the intestines to any amount.

The author therefore acknowledges the easy digestibility and the nutrient value of this preparation; the facility of assimilation and absorption are good; while slightly inferior to meat, it is much superior to bread as food. A great objection, however, must always remain, namely, the impossibility of its being taken in large quantity, due partly to the inconvenient form in which it has to be taken as a soup, but principally to the unpleasant taste which creates rapidly an insuperable aversion. From a purely chemical point of view Professor Beneke is right when he ascribes a higher value to these preparations than to meat; from a physiological point of view he is wrong. We are easily able to take daily the requisite amount of animal food (614 grammes, Moleschott), whereas to take the equivalent of leguminose (600 grammes), according to the author's experience would be an absolute impossibility. What then is to be thought in the case of a sick person whose appetite is impaired?

With patients who are unable to take a requisite amount of nourishment, especially in cases of great irritability of the stomach and intestines where small quantities of solid food cause vomiting or diarrhœa, a point is gained if we can in such cases find a food that can be taken in any quantity, however small. For such cases the leguminose is admirably adapted, and in form of soup. Its use is much more rational than the ordinary prescription of oat-meal gruel or barley-water. It is very desirable, when possible, to order its preparation with milk instead of water, as this also renders the taste more acceptable. In stenosis of the œsophagus and similar affections, this soup is well adapted; also in cases of feeding with the stomach-tubes. In all these cases we must not allow ourselves to be deceived as to the actual value of the leguminose as a nutrient. Prepared as above, a soup-plate contains only six grammes (℥iss) albumen; when milk also is used we get in addition twenty grammes more albumen.

The great merit, therefore, of the leguminose consists in the minute subdivision of the powder and its absolute freedom from all cellulose. As a result of experiments to test the comparative digestibility of peas and lentils when prepared in the ordinary way by standing over night in water and then being boiled in a meat soup, with that of the preparation of leguminose, it was found that in the former case forty per cent. of the nitrogen appeared in the stools, being nearly four times the quantity when, instead of the ordinary pea soup, leguminose is used.

The author reminds his readers that lentils should not be cooked in hard water. Twenty-five grammes lentils cooked with five hundred cubic centimetres distilled water one and one half hours take up 45.1 grammes water and become soft and eatable. The same amount in an

equal quantity of water in which previously 0.25 gramme sulphate of lime was dissolved, cooked the same time, took up only twenty-five grammes water. In the preparation of leguminose for soup, the character of the water should always be previously ascertained.

The experiments were carried out in Professor Hofmann's laboratory, for whose assistance and that of Dr. C. Flügger the author expresses great indebtedness.

Chronic Pneumonia of the Apex in Children. — Dr. L. Fleischmann[1] speaks of the frequency of this disease and the manifold difficulties attending an early accurate diagnosis. Such are the small extent of the infiltration, which is limited to the apex, and is often to be recognized only after repeated careful examinations; the frequent absence of marked physical signs, cough and sputa; and finally, the difficulty of examining a young, restless infant. The symptoms which we usually find in incipient phthisis in adults, such as cough, hæmoptysis, palpitations, anæmia and sinking in of the chest-wall, are absolutely wanting, or if present we are then dealing with a long-standing infiltration, not with a commencing disease.

In observing teething children the author has noticed the following symptoms which have led him to recognize or to suspect chronic pneumonia of the apex at an early stage.

(1.) One-sided swelling of the lymphatic glands of the throat, back of the neck or of the sub-maxillary region, when other local causes, such as pharyngitis, parotitis, alveolar inflammation, and diphtheria can be excluded, causes strong suspicion that there is pneumonia of the apex on the same side. The glandular swelling continues while the process in the lung is active, and ceases when the lung infiltrations become stationary, the glands swelling and subsiding again with each advance of the inflammation. Such glands have been usually called scrofulous.

In enlargement of the glands before and behind the ear, the former is often due to inflammations of the eye, the latter to that of the ear.

Children over six years old do not show so marked a tendency to glandular enlargement.

(2.) Certain obstinate forms of conjunctivitis (scrofulosa), which in spite of all treatment and without apparent cause, return from time to time with great severity, if but one and always the same eye is attacked, point with great probability to disease of the lung of the same side.

(3.) Eczema of one half of the face or head, which heals with difficulty and frequently recurs, sometimes alternating with or accompanied by ophthalmia of the same side, should lead to examinations of the lungs, where pneumonia of the apex of the same side is often present.

(4.) Certain sympathetic disturbances of one side of the face or head, namely, frequent changes in color from flushing to pallor, transitory cir-

[1] Wiener med. Presse, No. 20, 1876, and Allgemeine medicinische Central-Zeitung, No. 41.

cumscribed erythema of the cheek or temple, always on the same side, the easy production of Trousseau's maculæ, which also accompany meningitis, cerebral tumors, and other diseases to be excluded, often indicate pneumonia of the apex of the same side.

In several cases of brain tumors which the author has lately observed, he has found lung infiltration on the same side with the brain tubercles.

(5.) Intermittent sympathetic neuroses affecting one side of the head, characterized by redness and elevation of the temperature of the skin of the affected side, are often observed in children with lung infiltrations of the same side. The red and hot ear presents the same phenomena as those noticed in animals after cutting the sympathetic of one side.

(6.) Finally, neuralgias of the trigeminus, oculo-motorius, and vagus occurred and disappeared during the process in the lung of the same side in such a manner that no certain relation between the two could be determined.

All the above mentioned symptoms and appearances were observed by the author in a large number of cases; so he concludes that the probability of simple coincidence is inadmissible.

The ways by which these concomitant affections are conducted are through both the lymphatics and the sympathetic.

The author intends to give the more minute details in an extended work, and wished by these preliminary communications to lay claims to priority in such valuable and interesting observations.

PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

O. W. DOE, M. D., SECRETARY.

MAY 15th. *Lithotrity.* — DR. T. B. CURTIS read the regular paper for the evening, the subject being lithotrity, of which two cases were reported in full, with remarks.

CASE I. A man aged fifty-four, first seen in January, 1875, had multiple uric calculi, the largest being nearly an inch in diameter, two others measuring about half an inch. Subacute cystitis, urine acid, bladder fairly tolerant, good general health, no tendency to febrile disturbance. Ten sittings of lithotrity, taking place from February 8th to March 26th, sufficed, each sitting lasting between two and three minutes. No attack of acute cystitis or of urethral fever occurred.

At the end of March the patient experienced a most painful attack of kidney colic, and seed-like calculi of uric acid were occasionally passed. To counteract the lithæmic condition so evidenced, an alkaline treatment was instituted. In December, eight months after the last sitting, symptoms of vesical calculus having recurred, a small phosphatic stone of one half inch diameter was found

to have formed around a uric nucleus. This was crushed and evacuated in four sittings. Again in March, 1876, some signs of vesical irritation being again present, the patient was sounded, and a small phosphatic concretion was disposed of in one sitting. From that time the patient has remained free of stone.

Case II. The patient, aged seventy years, first seen June 24, 1875, of exceptionally robust constitution, experienced his first urinary symptoms about two years ago. Urine acid, not offensive; subacute cystitis, with pus and blood in moderate amount. The patient emptied his bladder; the introduction of instruments was easy and well borne; no tendency to feverish attacks existed. The stone, of uric acid, had a diameter of about one inch. Only one circumstance appeared unfavorable for lithotrity: the bladder, though healthy and sufficiently spacious, was unusually irritable, expelling its contents as soon as any instrument, sound, or lithotrite was introduced. The patient, however, was decidedly averse to any other treatment than crushing, and, as his condition appeared in all other respects very favorable, lithotrity was decided upon, with the expectation that the bladder would gradually become accustomed to the manœuvres of the lithotrite, and so be rendered more tolerant. The treatment was well borne; but after a few sittings three circumstances of an unfavorable nature developed themselves, and continued to cause great difficulty throughout the entire duration of the case.

In the first place the patient, who at first bore anæsthesia quite well, turned out to be very refractory to etherization; he gave so much trouble by ceaseless and violent coughing, with severe asphyxic symptoms, that after the fifth sitting anæsthesia had to be abandoned. Secondly, the stone turned out to be larger than had been supposed from the initial measurement with the lithotrite. Thirdly, the bladder retained its exaggerated functional irritability throughout the entire duration of the treatment, which comprised in all thirty-five sittings. At the last sittings, as at the first, just as soon as the lithotrite, having entered the bladder, was being opened, the accumulated urine would be ejected alongside the instrument, none being left behind; warm water carefully injected would invariably escape in the same way. It was hoped that the bladder would in time become accustomed to the manœuvres of lithotrity, and so be rendered gradually more tolerant and capable of retaining fluid, as Civiale and other authorities assert to be generally the case; but even at the last exploratory introductions of the sound and lithotrite, when all traces of calculus had disappeared, the bladder continued to empty itself completely by the side of the inlying instrument, and a catheter introduced immediately afterward always showed that not a drop of urine remained. This unfortunate *contre-temps* occurred under all circumstances, with as well as without ether, opium by suppositories as well as subcutaneously proving of no avail as a preventive; nor by a course of injections of warm water was it possible to train the bladder to retain its contents. At the beginning of the treatment, while the stone and its fragments were still large, this condition was the source of great difficulties, and at several sittings all attempts to seize the stone were fruitless. But by dint of great care and gentleness, and thanks to the patience and pluck of the patient, the fragments were finally reduced in size and partially evac-

uated, and it was then no longer difficult to work in a quite satisfactory way in the empty bladder. In spite of this unfavorable state of things the sittings were hardly ever attended by the slightest trace of hæmorrhage, the water during and after the sittings issuing untinged by blood; no increase of cystitis occurred; nor did the patient ever experience any marked febrile disturbance. His temperature was observed throughout, and only twice slightly exceeded the normal. He was able to be out in the open air daily throughout the duration of the treatment, taking occasionally quite long walks. At times the sittings were repeated every other day, and even then the patient rarely missed his daily walk, thus wholly escaping the prolonged confinement which is often so detrimental in advanced age, and which is one of the disadvantages of lithotrity.

Thirty-five sittings took place, at the end of which the bladder was found to be free of any remains of the calculus. Since the termination of the treatment the patient has enjoyed remarkably good health, the urine being quite clear and the bladder free from pain or irritability.

After reading the reports of the cases, which are here given in abstract, Dr. Curtis described in detail the *modus operandi*, and then added a few remarks relating to certain points of particular interest. With reference to the advisability of attempting to perform lithotrity in an empty bladder, he said that with regard to his second case the question arose whether lithotomy might not have been the proper treatment, supposing the consent of the patient to have been obtainable. Certainly such a condition of uncontrollable vesical intolerance as here existed is said by many of the best authorities to be a contra-indication to lithotrity; and this unfavorable condition, together with the size of the stone and the unfitness of the patient for etherization, was the source of great difficulty, delay, and anxiety in the pursuance of the treatment. But, on the other hand, the great dangers of lithotomy at the advanced age of the patient must be taken into account. Sir W. Fergusson's and Sir H. Thompson's statistics show that at the age of seventy the mortality of lithotomy exceeds thirty per centum.

But is it so indispensable, as has been said by nearly all our authorities on the subject, that the bladder should contain fluid during lithotrity? Is the inability of the bladder to retain urine or water during the operation necessarily an absolute contra-indication to the crushing operation? On this point there is room for doubt. In the first place we know that one of the bugbears of lithotrity, when the operation was new, was the fear of nipping the wall of the bladder; and it was to avoid this danger that anæsthesia was abstained from and that large quantities of fluid in the bladder were considered necessary. The danger of seizing the bladder-wall we now know to be imaginary. In fact, it would probably be very difficult to get hold of the bladder at all with a properly constructed lithotrite, if one were to try to do so. In the next place, several surgeons of the greatest experience in the practice of lithotrity, appear to be quite doubtful as to the real necessity of the presence of fluid in the bladder. Sir B. Brodie says: "Although, as has been just observed, the operation should never be attempted without the bladder having been previously distended with tepid water, it is worthy of notice that it has occurred to me sometimes to find

that during the operation the whole of the water which had been injected had escaped by the urethra without my being aware of the circumstance, so that many fragments must have been crushed in an otherwise empty bladder. On such occasions I have always been apprehensive lest some ill consequences should ensue. It is true that this did not happen in any one instance; still it is a thing that ought to be carefully avoided, as it is plain that any but the most careful manipulation would be dangerous under these circumstances." Sir W. Fergusson and Sir H. Thompson both habitually dispense with any preliminary injection, and appear to attach very little importance to the presence of urine at the moment of operating. In fact, Sir H. Thompson has no objection to operating in an empty bladder, though he usually takes precautions in view of securing the presence of a small quantity of urine. He says: "Perhaps three or four ounces may, as a rule, be always present with advantage, especially for young operators. Nevertheless, I am bound to say that with instruments constructed on the principles laid down, no mischief can be done by proper manipulation in the empty bladder; and for myself, I as frequently operate in that condition as not." The reader said that he had seen Sir H. Thompson, while practicing lithotrity, draw off with a catheter the little urine contained in the bladder, in order to get at the fragments more easily. Dr. Curtis expressed his belief that inability of the bladder to retain fluid was only a positive contra-indication to lithotrity when due to thickening and contraction of the bladder-wall; but that a condition of mere functional irritability, consisting in a readiness of a tolerably healthy bladder to expel its fluid contents by reflex contraction, under the stimulus of instrumental manœuvres, need not be a bar to the successful performance of lithotrity, even with a stone of moderate size. Such a condition is, however, obviously a source of difficulty and of danger, and makes it necessary for the operator to be exceedingly careful and gentle in order to avoid causing acute cystitis by rough manipulation or by unduly protracted sittings.

Dr. Fifield said that "Dr. Curtis had spoken of carrying the lithotrite directly to the calculus instead of leading the calculus to the instrument. He thought that the idea of Dr. Curtis should be clearly understood.

"The English school, as represented by Brodie, Pirrie, and others, give but one method of seizing the stone, namely, by sliding the female blade directly to the posterior surface of the bladder, and depressing this portion of the walls with it, when the calculus falls between the jaws by the sole effect of gravity. Pirrie, for example, gives no other direction than this. Bryant declares his approval of this process, originally taught, he claims, by Aston Key. Now the French school teach at least six different manœuvres for grasping the stone. For the performance of any one of these, the first requisites are the detection of the stone and judgment of its situation by the sense of touch (to the exclusion of the sense of hearing), using the lithotrite in a limited sense as a sound. Secondly, the turning of the lithotrite to the opposite of the place of the stone, opening of the instrument, return to the calculus, and seizure. In the first manœuvre, both English and French surgeons agree as to the depression of the wall of the bladder, but the French place less importance upon this, as the first requisite of finding the stone with the closed lithotrite gives

the certainty of its position, when a scarcely perceptible depression allows the stone to fall within the blades. Thus one does not exactly carry the open lithotrite to the calculus, but the operation demands two movements."

In regard to the instruments shown, one flat-beaked (B) by Weiss, and one by Robert et Colin, also flat-beaked, *écrou brisé*, Dr. Fifield agreed with Dr. Curtis in commending, but thought from what he had seen of the latter instrument in the hands of a most competent lithotritist at Necker, that the concavity of the beak might become so clogged with *débris* that the power of the screw would scarce suffice to expel them. He thought that the fenestrated beaks of Réliquet's lithotrites, into which the sharp steel *arêtes* of the male blades fit and project a little, the better instrument.

Dr. Fifield also spoke in terms of high praise of the most ingenious *lit de Réliquet*, by which a patient's pelvis is raised to any desirable height, inclined to either side, or may have a quick rocking motion imparted to it. It is extremely portable, and could be placed flat under a patient in bed, whose pelvis is then raised upon it without jar or exertion, no matter how heavy or feeble he may be.

Dr. Fifield also agreed with Dr. Curtis as to the impropriety of attempting to remove fragments of calculi in the concavity of the lithotrite. For the removal of such fragments he commended the plan of M. Réliquet, the eminent lithotritist and lithotomist of Paris. "This consists in placing a thin board beneath the patient as he lies in bed, passing a large catheter with a long and wide eye. Through this is thrown by a graduated syringe a stream of water, whose return brings with it the fragmentary particles. To insure against any fragment sticking in the fenestra of the instrument, a rod of steel, the full size of the catheter, and rendered extremely flexible (although in appearance solid) by being cut in spirals, is passed to the extremity of the catheter. It so completely fills it that any bit of gravel in the fenestra is at once extruded into the bladder. M. Réliquet has found a way of bringing out safely from the urethra a fragment which is too large to pass, or which may be too sharp in its angles to be pushed back to the bladder, or when one for any reason does not wish to seek it with the urethral forceps or curette. It is by passing his large catheter down to the fragment, injecting, and continuing to inject, water without interruption of the stream, whilst the catheter is gradually withdrawn, the fragment directly following it."

Dr. Edes asked if it was advisable to give alkaline solvents with a view to effecting the solution of the uric acid calculi.

Dr. Curtis answered that his object in administering alkaline remedies, namely, carbonate of lithia and bicarbonate of potassium, was to prevent the further formation of uric calculus; that he had little faith in the powers of alkaline treatment to dissolve an already formed calculus.

Dr. Jeffries inquired if any success attended the attempt made by an American to manufacture an instrument which could be introduced into the bladder and so isolate the calculus that it might be acted upon locally by solvents.

Dr. Curtis replied that he had heard of such an instrument being made, but had never known of any good result being derived from it.

Dr. Jeffries asked if recontraction of the slit meatus was apt to take place.

Dr. Curtis answered that in such cases the incision was kept open by the instruments, which were subsequently passed through it, and that it remained permanently patent.

Macro-Microscopical Sections of the Brain. — Dr. Denny, by invitation, showed some macro-microscopical sections of the brain, recently prepared by him in Vienna. They were colored with carmine, and so mounted that they could be examined by transmitted light. The specimens were very numerous, and comprised many sections made through the whole brain.

Dr. Fitz inquired as to the method of preparing the specimens.

Dr. Denny said that the brain, after removal of all enveloping tissues and vessels, is placed in common alcohol, where it remains about ten days, when absolute alcohol is substituted, to which tincture of iodine is added until the liquid is of the color of Madeira wine. It remains in this solution, which is frequently changed, also about ten days, when it is transferred to a saturated solution of bichromate of potash.

A human brain requires about two years before it is properly hardened, though the medulla, pons with the ganglia attached, and the brain of dogs, monkeys, and the fœtal brain may be hardened in three or four months.

To embed the brain in the cylinder of the microtome, it is to be dried and set in the desired position in a warm, flowing mass of stearine fifteen parts, lard twelve parts, and white wax one part, melted together. On cooling, it is liable to shrink, and it is well to pour into the space thus contracted a solution of crude turpentine and wax melted together. The basin surrounding the cylinder is filled with water, and the sections are then cut under water. The cut section is placed in water and allowed to remain some hours; it is then removed to a solution of carmine quite free from the odor of ammonia, and after twelve hours it is transferred to water slightly acidulated with acetic acid. After remaining over night in this liquid, it is transferred to common alcohol and then to absolute alcohol, remaining about an hour in each. It is then removed to the glass, and, when the alcohol is evaporated, it is penciled over with oil of cloves. When this is carefully done, so that there shall be no superfluous oil, Dammar lac is then poured over, and the upper glass adjusted. This should remain level one or two days, then, after removing the old superfluous Dammar lac from the edges, a thin layer of melted wax is laid with a brush over the edges, and when cool, over this again a preparation of asphalt in ether. Dr. Denny added that in his specimens, after the above preparation, he applied also a solution of caoutchouc in chloroform over the edges, and then covered both edges and sides with white wax. Oil of turpentine exposed to the air until it becomes thick may be used to render the specimen transparent instead of cloves.

Dr. Fitz inquired if Meynert cut with a free hand or with the microtome.

Dr. Denny answered, with the free hand.

Dr. Fitz asked if the details of the structure were well preserved in specimens hardened by this method.

Dr. Denny thought they were preserved much better than in alcohol alone, as in the latter the specimen became shrunken.

Chylous Urine. — Dr. Wood showed a specimen of chylous urine, and gave the following history of the case. The patient is a native of Cuba, but has not resided there for twelve or thirteen years. His father was operated on twice by Sir Henry Thompson for stone, and his grandfather died of gout.

In June, 1874, he had scarlatina, followed by nephritis. During convalescence from this he was upset in a wherry, and cystitis, according to his report, supervened. After the cystitis, the patient passed milky urine for about three weeks, when this condition of the urine disappeared spontaneously. Shortly afterward it reappeared, lasted about a month, and again ceased. In July, 1875, the milky urine again appeared, and has continued up to the present time. The appearance of the urine is milky. A large amount is passed. It has a specific gravity of from 1008 to 1013, and the sediment contains blood and leucocytes. The fat can be seen under the microscope, not in the form of globules, but as extremely minute amorphous particles, which do not perceptibly diminish the light. There is more blood and more fat after meals than before. At times the urine is perfectly clear before meals. The amount of fat in one specimen of morning urine was about one half per cent., and the amount of albumen in the same specimen was also about one half per cent. The pain is located chiefly in the region of the bladder, rectum, and perinæum. There are enlarged glands in the groin. Dr. Wood added that the specimen of chylous urine shown differed from many in not being spontaneously coagulable, although there appear to have been coagula twice, so that the patient was obliged to pass a catheter. In answer to the inquiry of Dr. Edes as to the presence of casts, Dr. Wood replied that they had never been found.

Dr. Curtis asked if clear urine after fasting was albuminous.

Dr. Wood answered that he had never observed it, but thought it would be found so.

Dr. Chadwick inquired as to the pathology of the disease.

Dr. Wood replied that it was considered by Roberts to be a disease, probably hypertrophy, of the lymphatics in some portion of the urinary tract; in this case probably the bladder, as all the symptoms were referable to that region.

Dr. Fitz mentioned one case where it was found to be associated with dilated lymphatics of the scrotum.

Dr. Wood referred to two cases of diseased lymphatics of the skin, reported by Roberts, one that of the abdomen and the other that of the scrotum, in both of which a fluid similar in appearance to that of chyle exuded through the lymphatics, which were hypertrophied.

Salicylic Acid and Salicin in Urine. — Dr. Edes called the attention of the society to the similarity in the reaction of two specimens of urine, one that of a patient taking salicin and the other that of a patient taking salicylic acid, when treated with the salts of iron, each giving an intense dark-purple color. The reaction being the same, he intended to try the effects of salicin in rheumatism, giving it in doses of ten grains often repeated.

Stricture of Large Intestine. — Dr. Edes showed a specimen of stricture of

the large intestine, scarcely admitting the little finger, the stricture taking place at the point where the intestine turns over the brim of the pelvis. The patient, a female, entered the City Hospital on account of vomiting, attended with tympanitic distention of the abdomen so great as to require puncture twice for the relief of the tympanites. Dr. Edes remarked that he had once before met with a similar case.

Dr. Chadwick inquired if there was any specific history, and also if any peritonitic adhesions were found at the autopsy.

Dr. Edes replied to both questions in the negative, adding that there was some slight recent peritonitis, which he thought might have arisen from the punctures.

Dr. Chadwick remarked that stricture of the intestine in this part, resulting from peritonitic effusion, was not, he thought, an uncommon condition in women.

Dr. Edes said there was no evidence in his cases that the stricture was produced by old peritonitis.

Dr. Fitz asked if the stricture was at the sigmoid flexure; if so, there might be a suspicion of its being of a cancerous nature, as cancer usually affects that portion of the intestine.

Dr. Edes replied that it seemed to be below that point, and added that there were no enlarged glands or other indications leading one to suspect cancer.

THE FISHER CASE.

We give a brief *résumé* of the facts of this case, which many of our readers will recognize as the one recently referred to where death occurred during the administration of ether. The patient, a young school-teacher, had suffered for two years or more from dysmenorrhœa, and had been treated by a number of physicians without relief. A few months since she placed herself under the care of Dr. Sinclair, who recommended an incision of the os with the hope of thus effectually relieving a painful and obstinate affection. The operation was postponed until the summer vacation, when the patient would be able to give a proper amount of time to convalescence. Accordingly, early in July, the patient was seen again, but was advised to wait until the approaching catamenia had passed. They having ceased on the 15th, the operation was performed at the private hospital of Mrs. Ware on the 19th. Ether was administered, and the patient was then placed in Simms's position, the ether towel now being intrusted to a female attendant. Dr. Vogel, who assisted Dr. Sinclair at the operation, felt of the pulse soon after the operation had been begun, and found that it had ceased to beat. Breathing had ceased also, and in spite of all efforts made, the patient could not be resuscitated.

The first information which the profession and the public received of this case was that an inquest had been ordered for the purpose of determining, not whether a correct return had been made as to the cause of death, but whether an attempt had been made to procure an abortion. We need hardly say that the professional public attached no weight to the rumors and suspicions mys-

teriously circulated at that time. We shall refer, therefore, to but one or two points in the testimony given at the inquest. The autopsy, performed by Dr. Treadwell, showed, in addition to Bright's disease, a chronic pleurisy on one side of the chest, and an engorgement of the pulmonary artery, indicating that death resulted from asphyxia. The testimony on the condition of the ovaries and uterus pointing to a miscarriage at some time previous to the operation, we refer to below. The jury found "that the said Clara T. Fisher came to her death on Wednesday, July 19, 1876, at about between the hours of eleven and twelve o'clock A. M., at No. 4 Ferdinand Street, in Boston, by reason of suffocation, caused by the administration of sulphuric ether for a simple surgical operation, under the direction of Dr. A. D. Sinclair, assisted by Dr. Frederick W. Vogel; and the jury further find that, in their opinion, there was a lack of caution in said administration of ether, in not allowing a due quantity of atmospheric air to pass to the lungs of the patient during the etherization; and the jury are also of the opinion that there was a too hasty abandonment of the means for the resuscitation of the patient, and that the diseased condition of the patient may have contributed, in some slight degree, to her death."

Although it may be said that the jury could hardly arrive at any other opinion from the testimony as reported, excepting perhaps that referring to means taken for resuscitation, we feel sure that the professional verdict would exculpate a physician of Dr. Sinclair's high standing from any want of ordinary care in handling a case of this sort. The great superiority of ether over chloroform in point of safety has, we think, engendered among many physicians a certain want of appreciation of the amount of care necessary to be employed in the use of this, as indeed of any, powerful agent. A feeling of too great security, followed by the inevitable calamity, frequently places the blame where it is undeserved. It is not the individual or the agent, but custom, which is at fault. With precautions such as should always be taken, and which, undoubtedly, a large number of physicians think unnecessary, the warning signals will always be displayed in ample time to avert impending danger.

THE MEDICO-LEGAL VALUE OF THE TRUE CORPUS LUTEUM.

THE question as to the preëxistence of pregnancy in the case above referred to is one which we are no more called upon to consider than were the coroner or the jury. The fact that they were willing to receive evidence bearing on a question in no possible way connected with the case, is no reason why we should take any part in a discussion the merits of which are already being freely criticised by a sympathizing public in a manner which reflects but little credit upon the coroner who conducted the inquest.

One statement, however, in the medical testimony, seems deserving of criticism. In his account of the autopsy, Dr. J. B. Treadwell stated that "there was a corpus luteum — true — in the right ovary, about three-fourths of an inch in length. Its wall was thick and congested, and of a light yellow color. There was a small cyst at its centre. The central portion, except the cyst, was firm

and of a yellowish color, less bright than that of its wall." In his subsequent testimony he said that the presence of a true corpus luteum in the ovary was a sure sign of pregnancy, and one about which there could be no doubt whatever.

While we would admit that a true corpus luteum is, as a rule, found in the ovary following conception, it seems evident that, like all rules, there are exceptions.

In 1840 Négrier [1] took the ground that a corpus luteum following conception did not differ from that which follows menstruation. In 1842 Dr. F. A. Pouchet [2] summed up the account of a series of observations with the statement that "whether the ovule which they (corpora lutea) have expelled does or does not become fecundated, whether or not it undergoes the transformation into an embryo, all have, nevertheless, the same form and the same structure." In a letter to the French Academy, under date of July 17, 1843, Professor Bischoff writes that the true corpora lutea may be produced independently of impregnation, and that therefore they cannot be received as proofs of pregnancy, since they are not connected necessarily with conception. The same year Dr. Knox,[3] after giving the account of a number of observations made upon animals, writes that occasionally there is no distinctive characteristic by which the corpus luteum (true) can be distinguished from the menstrual one.

The following year Dr. Wharton Jones,[4] in connection with the account of a careful dissection he had made, says: "Though physiologically we may be permitted to speculate . . . . on the relation between the occurrence of corpora lutea in the ovaries and a preceding coitus, it would be rash and unwarrantable in any one to pronounce positively from the occurrence of a corpus luteum in the ovaries, that coitus had taken place. The discovery of an ovum in the uterus, in process of development, could alone, in the present state of knowledge, warrant such an affirmation in a court of law."

It will thus be seen that even prior to 1850, many good observers declared positively against the value of a true corpus luteum as a sure proof of pregnancy. In 1851 Prof. J. C. Dalton wrote a Prize Essay on the Corpus Luteum of Menstruation and Pregnancy. In this paper he took decided ground that the true corpus luteum was a sure evidence of a preëxisting pregnancy.

Alluding to the observation made by Négrier, he dismissed any discussion of the cases cited by that writer with the remark that his "account is somewhat complicated, and, moreover, entirely opposed to the views entertained by *most other writers.*" (The italics are our own.) Since that time considerable attention has been given to the subject, and the views first clearly advanced by Professor Dalton have come to be considered as greatly adding to the value of the true corpus luteum as a sign of pregnancy.

The subject is, however, still *sub judice*, and many authorities upon the subject are unwilling to admit the fact that the presence of the true corpus luteum is an infallible sign of a loss of virginity.

Dr. Wm. T. Benham [5] reports a very interesting case in which he made

[1] Recherches anatomiques et physiologiques sur les Ovaries dans l'Espèce humaine.
[2] Théorie positive de la Fécondation.
[3] Medical Gazette, xxxiii. 371.
[4] Medical Gazette, xxxiv. 623.
[5] Edinburgh Medical Journal, August, 1873, page 127.

an autopsy upon a young girl, an inmate of the British (England) Lunatic Asylum, who had been under observation for nine years. She died suddenly during an epileptic seizure, while menstruating. At the autopsy a well-marked true corpus luteum was found in the left ovary. The uterus was found to be a virgin one, and in its cavity was an unimpregnated ovum.

With this case before us, and in face of the strong statements made by the writers already alluded to, it seems to us that the opinion given at the inquest above referred to was too strong, although sustained by such observers as Lee, Montgomery, Müller, Dalton, Cazeaux, and others, and that an opinion should have been given that the presence of a true corpus luteum was a strong presumptive, but not positive proof of pregnancy.

MEDICAL NOTES.

— At a meeting of the trustees of the Massachusetts General Hospital, held on Friday, August 4th, Dr. J. H. Whittemore, assistant physician to the McLean Asylum, was elected resident physician to the Massachusetts General Hospital.

— *The Medical Record* of July 8, 1876, contains an account of an ununited fracture of the upper end of the fibula. The account given by E. D. Merriam, M. D., of Conneaut, Ohio, who sustained the fracture in his own person, is as follows: —

"The injury occurred by being capsized while riding in my covered buggy, and being dragged underneath it a short distance, my legs being on the ground wrapped in a buffalo-robe. When finally released from the buggy, I found I had sustained a fracture of the leg. It proved to be a transverse fracture of the tibia just below the tubercle, one and one-half inches below joint of knee, near attachment of the ligamentum patellæ, and of the fibula about one inch below its head. It is nine weeks since the accident occurred. I am about on crutches, with a good tibia, but the deformity and disability consists in the fact that the superior fragment of the fibula, with the biceps attached, is drawn upward and inward, so that it lies across the under side of the knee. The head of the fibula seems to rest upon its articulating surface, while its inferior extremity is drawn upward and inward, and is loose and movable. This dislocation of the head of the fibula was not diagnosed at the time of dressing the fracture by the attending surgeon, and in fact I do not know that anything could have been done to overcome the power of the biceps on such a short fragment. The consequence is a loss of the fullness and prominence of the external hamstrings, and weakness of external part of knee, being inclined to easily turn out. The superior extremity, inferior fragment of fibula, seems to be attached by bony union to tibia at seat of fracture, having a depression between that and the superior fragment. I am able to rest my foot upon the floor, but bear no weight upon it. There has also been a paralysis of the extensors of foot and toes, with extreme sensitiveness or hyperæsthesia of dorsum of foot and toes, which still continues.

"There has been no appearance of bruise or injury to the anterior surface of the limb, but my foot droops and toes drag."

Professor F. H. Hamilton, to whom the history of the case was sent by Dr. Merriam, says, —

"The fracture of both bones of the leg at this point is unusual. The refusal of the fibula to unite, on account of the contraction of the biceps, suggests the propriety of flexing the leg in treating such a fracture, or of dividing the biceps at once.

"The hyperæsthesia, pain, and paralysis of certain portions of the foot is plainly due to some injury inflicted upon the external popliteal nerve, probably by the pressure of the upper fragment; and I have said to the doctor that the biceps ought to be divided, or the upper fragment of the fibula dissected."

— A pamphlet of fifteen pages, adorned with seventeen wood-cuts, is published by Dr. A. Amussat, of Paris, entitled Tied-in Catheters and Whalebone Conductors. On the subject of tied-in catheters little or nothing is said. The author describes and figures, as if new and original with himself, several very familiar applications of the long whalebone bougie, to be used either with catheters open at both ends, or in combination with the tunneled arrangement introduced by Van Buren and Gouley. The procedure called "cathétérisme sur conducteur" was described as far back as 1813, by Desault, and has long been common property. The only original idea here offered to the world is the extension of the "tunnel" to lithotrites, an innovation which we cannot regard as happy. The author has, by some chance, overlooked one of the most useful applications of the whalebone conductor; we allude to the tunneled catheter staff of Gouley, for external urethrotomy. Perhaps if Dr. Amussat can be induced to exert anew his inventive genius for the benefit of his countrymen, he may discover this combination of instruments, which will afford him an opportunity for another elegantly printed and copiously illustrated brochure.

WORCESTER CITY HOSPITAL.

SURGICAL CASES.

[REPORTED BY CHARLES A. PEABODY, M. D.]

Burn. — A child aged seven, four months before admission, was burned by boiling water extensively on the right leg. When admitted there was extensive but superficial ulceration of the inner and anterior surface of the thigh; at the knee the tissues were involved somewhat more deeply, the ulceration nearly girdling the limb at this point, and extending about two inches below the knee; below this the skin was sound; the leg was flexed at an angle of about ninety degrees with the thigh; the ulcerated surface was covered with tender and very sensitive granulations, and there was considerable suppuration.

Under chloroform, an attempt was made at extending the leg; but this could not be completely effected, as by it considerable laceration and hæmorrhage were caused at the flexure of the joint. Extension and counter-extension were then applied, the extending weight consisting of a bottle containing about a quarter of a pound of sand, a small quantity of sand to be added daily. The leg was dressed with a weak solution of chloral. After about two weeks of this treatment, the ulcers on the thigh were healed and the limb almost as

straight as its fellow. After another fortnight the leg was entirely healed and straight. Extension was now taken off, the child got up, and made to walk.

Burn. — A child, eight years old, was burned by boiling water about eighteen months ago, the burn being particularly severe about the right elbow. A year ago she was brought to the hospital for consultation. At that time there was a girdling ulcer extending from about three inches below the elbow to the same distance above it. The tissues were more deeply involved than in the preceding case. Granulations, exuberant, tender, and sensitive, covered the ulcerated surface; the joint was flexed at about a right angle. The condition of things was so unpromising that amputation was advised as the only resort. This was not acceded to by the parents, and she was therefore taken home. She now returns for the purpose of having the arm removed, having been under medical care during nearly the whole of the intervening period. The general condition of the patient is much the same as a year ago, only she looks more delicate. The appearance of the ulcer is unchanged, but there is more distortion of the limb, all the flexors being much contracted. The arm was amputated just above the middle of the humerus. The operation was well borne, and the wound healed rather slowly, but without a bad symptom.

Sarcoma of Jaw. — An Irishman, aged twenty, about four months before admission, received a severe blow on the cheek from a base-ball. This was followed by pain and swelling, which, subsiding, left a small tumor over the antrum resembling the swelling of an abscess. For this he consulted his physician,[1] who extracted a decayed molar. A small quantity of pus followed. In about ten days the patient returned (having in the mean time had another tooth out), no better, but rather worse. The antrum was then punctured; about half a drachm of thin pus followed. A probe being introduced passed freely around in the antrum, encountering certainly no hard growth. A bistoury was passed into the tumor from within the lip, and a little sanious fluid followed. The patient was sent home, with a weak solution of carbolic acid to use as a wash. After about a week's use of this he appeared to be better. He was then lost sight of for about seven weeks, when he again presented himself, the growth having made alarming progress, and now presenting the characteristics of malignant disease. The patient had always been healthy, and at this time his general condition was excellent. There is no family history of cancer, though his father was one of eighteen children, and he himself is one of eleven.

There being no doubt as to the malignant nature of the tumor, its removal was determined upon, the operation being performed by Dr. George A. Bates, as follows: —

The patient was etherized, and an incision made through the cheek from the corner of the mouth to a point about an inch below and behind the outer angle of the eye. The knife at once came upon the tumor, which, issuing from the antrum, had spread up over the maxilla as far as the orbit. This growth was dissected out. The maxilla was found to be much diseased, and was removed wholly, its bony connections being severed with forceps. The wound was closed with hare-lip sutures and the cavity packed with lint.

The next day the patient was very comfortable and free from pain. On the

[1] Dr. F. W. Brigham, of Shrewsbury, who kindly furnished the history of the case prior to admission into the hospital.

fourth day the sutures were removed; union perfect; the cheek was sustained by adhesive straps, the lint removed, and the cavity ordered to be syringed daily with a tepid solution of chloral.

The microscope showed the tumor to be a round-celled sarcoma, of rapid cell-growth and degeneration. The prognosis was, therefore, decidedly unfavorable.

On the twenty-first day the wound had entirely healed, but the swelling of the lower lid, which at the time of the operation was thought to be only œdema, had persisted, and there was now noticed a suspicious appearance of the inner surface of the lower lid near the outer canthus; there was also evidently a new growth at the side of the nose.

A second attempt at extirpating the disease was made, the incision being carried along the lower lid and down the side of the nose, and everything that looked like diseased tissue was carefully dissected out. There was resulting ptosis, but the wound healed rapidly, and the patient was discharged. Soon after going home, however, the disease again showed itself, and advanced with rapid strides to a fatal termination. The patient died about eight months after the receipt of the injury.

Double Inguinal Hernia from External Violence. — A laborer, aged sixty. In a bar-room the patient received a severe kick in the abdomen, from which at once resulted a large double inguinal hernia. Patient states that he never had had a rupture. When brought in he was somewhat feverish; tongue dry; pulse quick, and almost wiry; considerable pain. Was ordered twenty drops of black drop every three hours through the night.

The next morning the patient was quite comfortable; fever gone; tongue and pulse quite natural. He was kept quiet for four days, and then allowed to go home.

LETTER FROM PORTLAND.

Messrs. Editors, — The courts adjourn during the hot season, and the lawyers have a chance to refresh themselves among the hills and on the seashore for the greater part of three months. Every parish makes especial arrangements for the vacation of its ghostly adviser, who once a year slips off his surplice and for six or eight weeks ceases from troubling the wicked. But though people may cheerfully take an annual respite from litigation, and may yearly experience so moral an interval as safely to venture to dispense with the restraints of public religious observances, with a malicious ingenuity they manage to be sick without intermission, and thus keep their doctors at work the year round. The result is a general agreement in our profession that its members get too little recreation. It is almost proverbially hard for a physician with a large practice to cut loose from it as often as once in a twelvemonth. And so, as it was supposed that everybody (that it is to say, everybody who is anybody) either had been or was going to Philadelphia this year, there was a universal anticipation that the meeting of the Maine Medical Association would be but slimly attended, and that there would be a notable lack of the enthusiasm and vigor which has for so long a time characterized its sessions. It was con-

sequently very agreeably surprising to find as full a representation of medical men as usual, and to see no diminution in the amount or deterioration in the quality of the work done. Just how to account for this large attendance is somewhat difficult. Perhaps the hard times are keeping people from the great show; possibly the alarming prevalence of health permitted an unwonted absence from home. At all events, the meeting was very successful in all respects, and that is the main consideration, after all. A few prominent men from different parts of the State, whom one always expects to meet at these gatherings, were missed with regret; and the absence of one — the venerable Dr. Buxton, of Warren, one of the founders of the association — was the occasion of a resolution of sympathy and good wishes.

The meeting opened Tuesday morning, the 27th of June. The inaugural address of the president, Dr. J. M. Bates, of Yarmouth, was referred to a special committee, with instructions to make recommendations for action on its various suggestions. The most important of these related to the preliminary education of medical students. Last year the association passed a resolution declaring it to be the duty of physicians to impress on young men intending to study medicine the necessity of a thorough preliminary training, and to decline to receive under their instruction such as are deficient in education or mental endowments. That was all very well, of course, and put the society properly on record. But the passage of a resolution at an annual meeting is one thing, and strict conformity to the spirit of it by individual members is quite another; and instances are by no means wanting to show that theory and practice have not agreed in this matter.

Still some impression, though often very small, is made on even the most callous by the formal declaration of right principles; and, at the suggestion of the committee, a resolution,[1] which is more emphatic than the previous utterance on the subject, was passed without a dissenting voice.

There can be no question about the advance of professional sentiment hereabouts in this regard. Men who a year ago were timid about insisting on the examination of applicants in our schools, are now outspoken in favor of a searching test of ability.

In the Portland School for Medical Instruction an entrance examination has been held for a year past in every case where the candidate could not show a diploma from a good high-school, or something better, and the teachers have expressed the intention of requiring a knowledge of the elements of Latin and natural philosophy in and after the spring of 1878. When small schools, which are dependent on the fees of their pupils for their running expenses, have courage to adopt this policy, which the great colleges avoid because they consider it suicidal, there really seems to be reason to hope for a general reform in the methods of medical teaching.

The committee appointed by the association to visit the Medical School of Maine reported that ninety-seven students were enrolled, — an exceptionally large number, — and that they were above the average in intelligence and scholarly attainments. Twenty-one were graduated after passing an unusually satisfactory examination. The clinics during the term were large and very

[1] See JOURNAL, July 13th, page 47

interesting. The plan of allowing students who have studied medicine but one year to come up for their final examination in anatomy, physiology, and chemistry, has worked well; but a second year's trial is essential for a full demonstration of its results. In addition to the regular lectures, the students have had the advantage of a short course on public health from the professor of therapeutics.

This last leads me to speak of the efforts of the association to establish a state board of health in Maine. A committee was appointed last year to cooperate with the constituted authorities in the early appointment of such a board. The committee reported at this meeting that Governor Connor, in his inaugural address, recommended favorable action. The judiciary committee of the legislature was convinced of the propriety of the measure, but, not deeming it expedient to act up to its convictions of what was right, preferred to truckle to the popular clamor for retrenchment, and killed the bill. The senseless opposition of the advocates of certain exclusive systems of medical practice was so great that the committee believe it to be better that important sanitary measures be introduced by the representatives of the people for whom the benefits are asked than by the medical profession, which is frequently regarded with an unworthy suspicion, and whose active efforts for the public good are so often misconstrued. The majority of the legislators are indifferent to, or ignorant of, the crying necessity for a public health board. The committee recommend, therefore, that the members of the association make especial efforts to enlighten the representatives from their respective sections, so that through them the people will demand in their own behalf the action which the physicians, with characteristic disinterestedness, have vainly sought for them.

The annual oration was pronounced by Dr. Lewis W. Pendleton, of Belfast, whose subject was Involuntary Action. The abstract of this oration, in a recent number of the JOURNAL,[1] conveyed to your readers an idea of its wisdom, wit, and scholarly finish, and it must suffice to say that, without any disparagement to the profound and brilliant productions with which previous orators have favored the association, this is admitted to have surpassed them all.

Dr. George F. French, of Portland, was elected orator for 1877.

Among the resolutions was one favoring the adoption of the metric system of weights and measures at the earliest practicable time; and another protesting against congressional sanction to the National Surgical Institute.

But little space remains for mention of the strictly medical papers which were presented. A number of them, as you will judge from the subjects chosen, and from the authors[2] whose names appeared in your account of the proceedings, were exceedingly interesting, and some must be regarded as actual contributions to our stock of knowledge. The discussions which were called forth were entertaining and instructive.

The next meeting of the association will be held in this city on the second Tuesday of June, 1877. GAMMA.

[1] JOURNAL, July 13th, page 48.
[2] JOURNAL, July 13th, page 47.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JULY 29, 1876.

	Estimated Population.	Total Mortality for the Week.	Annual Death-Rate per 1000 during Week.
New York	1,060,000	744	36.49
Philadelphia	825,594	464	29.22
Brooklyn	506,223	318	32.66
Chicago	420,000	212	26.25
Boston	360,000	196	28.31
Providence	101,000	53	27.18
Worcester	51,300	24	24.34
Lowell	51,700	41	41.24
Cambridge	50,000	23	23.92
Fall River	47,200	41	45.17
Lawrence	36,000	18	26.00
Lynn	34,000	16	24.47
Springfield	31,400	14	23.18
Salem	26,500	22	43.17

Normal Death-Rate, 17 per 1000.

The following testimonial has been presented to Dr. Sinclair by physicians of this city as expressive of their feelings toward him at the present time. It shows that whatever misapprehensions and false impressions may have gone abroad in connection with recent events with which his name has been associated, Dr. Sinclair stands without reproach in the opinion of his professional associates: —

Boston, *August* 5, 1876.

A. D. Sinclair, M. D.

Dear Sir, — The undersigned, your professional brethren in the city of Boston, desire to express to you their sincere sympathy in view of the trying experiences through which you have recently been compelled to pass. Your conduct in connection with these events has inspired our respect for your manly character, while it has not in any degree impaired our appreciation of your professional skill and integrity. We have carefully studied the published evidence elicited during the singular investigation of the case which you attended, and have failed to discover proof that you neglected any of the ordinary precautions against accident in such circumstances.

We take pleasure in availing ourselves of this unusual opportunity to avow our continued and cordial regard for you.

[Signed] Henry I. Bowditch, C. Ellis, Geo. H. Lyman, H. W. Williams, Wm. Ingalls, Francis Minot, R. M. Hodges, H. J. Bigelow, C. E. Buckingham, David W. Cheever, Benj. E. Cotting, and thirty others.

Dr. George Stedman has been appointed coroner for Suffolk County.

Books and Pamphlets Received. — Analysis of Six Hundred and Seventeen Cases of Skin Disease. By L. Duncan Bulkley, A. M., M. D. Reprinted from the American Practitioner. New York: G. P. Putnam's Sons. 1876.

A Clinical Study on Herpes Zoster. By L. Duncan Bulkley, M. D. Extracted from the American Journal of the Medical Sciences.

Chirurgie Antiseptique. Principes Modes d'Application et Résultats du Pansement de Lister. Par le Dr. Just-Lucas-Championnière. Paris: J. B. Baillière et Fils. 1876.

Lithotomy: Its Successes and its Dangers. By an M. R. C. S. E. Melbourne: F. F. Baillière. 1876.

Doctors Differ. A Lecture delivered at the Melbourne Athenæum. By J. G. Beauey, F. R. C. S.

An Unusual Case of Cancer. By James S. Greene, M. D. Extracted from the American Journal of the Medical Sciences.